

REMARKS

Reconsideration and the timely allowance of the pending claims, in view of the following remarks, are respectfully requested.

In the Final Office Action, the Examiner rejected claims 1-17, under 35 U.S.C. §103(a), as allegedly being unpatentable over Rabipour '515 (U.S. Patent No. 6,324,515) in view of Tseng '974 (U.S. Patent No. 6,172,974).

By this Amendment After Final Rejection, claims 1 and 14 have been amended to provide a clearer presentation of the claimed subject by incorporating various features from the dependent claims. Applicant submits that no new matter has been introduced. As such, claims 1-17 are currently presented for examination, of which claims 1 and 14 are the sole independent claims.

Insofar, as the prior art rejections are deemed to still be relevant in view of the claim changes noted above, Applicant respectfully traverse these rejections, under 35 U.S.C. §103(a) for the following reasons.

I. Prior Art Rejections.

As noted above, independent claim 1 positively recites, *inter alia*, a first centre being associated with a calling terminal and including a first transcoder unit, a second centre being associated with a called terminal and including a second transcoder unit, *wherein at least one of the first and second centres comprises a mobile switching centre*, and that the *terminals* are arranged to *provide information* regarding the supported *speech codecs* to *their associated switching centres*. Claim 1 also positively recites that the first and second transcoder units and *each of the terminals include speech codecs*, in which each of the speech codecs comprises an encoder unit and a decoder unit.

Claim 1 further positively recites that the first centre is configured to perform handshaking with the second centre, the handshaking including indication of the speech codecs supported by the calling terminal, wherein at least one of *the first and second centres is configured to choose the speech codec used commonly by the calling and called terminals*, and at least one of *the first and second centres is configured to establish call*

connections that bypass one or more of the transcoder units or to control the transcoder units to transmit encoded speech between the called and calling terminals without performing speech encoding operations so that speech is encoded and decoded only in the terminals.

Such features are amply supported by the disclosed embodiments. For example, the disclosed embodiments are directed to a novel approach of tandem free operations (TFO) by providing *transcoder-free operations* (TrFO) in a mobile communication system. In particular, for TrFO operations and negotiations, the mobile switching centres (MSCs) receive information, from the terminals, regarding the speech codecs that are supported by the terminals and the MSCs decide the most appropriate speech codec (*e.g.* the best encoder unit among a plurality of commonly supported encode units), the MSCs indicate the chosen speech codec to the terminals, and, only if no common speech codec is available, then the MSCs control the operation of the transcoders. In this manner, the MSC transcoders are *not* a part of the transmission path as TrFO operations are the default setting, but only when no common speech codec is available for the terminals during a connection, do the MSCs invoke their associated transcoders.

With this said, Applicant submits that in stark contrast to the Examiner's repeated contentions, none of the asserted references, whether taken alone or in combination, teach or suggest each and every element of claim 1, including the features identified above. In particular, the Rabipour '515 reference specifically teaches the use of terminals 100, 140 having asymmetric vocoders 200, in which each vocoder 200 contains *a single encoder unit* 222 with multiple decoder units 224, 226, 228. (*See, Rabipour '515*: col. 6, lines 55-col. 7, lines 7; FIG. 2). Information regarding the supported decoders is transmitted to the base stations 110, 130 that are associated with the opposite terminals 140, 100, and then base stations 110, 130 carry out handshaking and determine the suitable decoders for use in both terminals, such that a TFO connection is established. (*See, Rabipour '515*: col. 9, lines 32-56).

Rabipour '515 further teaches that, as the "default mode", the base station transcoders (*i.e.*, encoder/decoder 315, 320 and encoder/decoder 365,370) are engaged and comprise part of the transmission path, as the transcoders must be separately switched off by the base stations for TFO operations. (*See, Rabipour '515*: col. 10, lines 26-35).

Given these comprehensive disclosures, it is clear that Rabipour '515 fails to teach or suggest a first centre being associated with a calling terminal and including a first transcoder unit, a second centre being associated with a called terminal and including a second transcoder unit, *wherein at least one of the first and second centres comprises a mobile switching centre*, as required by claim 1. That is, the TFO operations and negotiations taught by Rabipour '515 are exclusively between the terminals and base stations and *do not involve any MSCs*, as claimed. At this point, the Examiner should appreciate and understand that, base stations and MSCs are fundamental wireless communication entities, each having distinct configurations and functionalities. As such, there is no way that the base stations of Rabipour '515 can be remotely construed as corresponding to an MSC.

Along these same lines, Rabipour '515 cannot be said to teach or suggest that at least one of *the first and second centres is configured to choose the speech codec used commonly by the calling and called terminals*, and at least one of *the first and second centres is configured to establish call connections that bypass one or more of the transcoder units or to control the transcoder units to transmit encoded speech between the called and calling terminals without performing speech encoding operations* so that speech is encoded and decoded only in the terminals, as required by claim 1. Namely, as noted above, Rabipour '515 specifically teaches that it is the base stations 110, 130 – *not* the MSCs – that perform handshaking and ultimately determine which decoders are to be used in a TFO connection.

Moreover, Rabipour '515 fails to teach or suggest that *each of the terminals include speech codecs*, in which each of the speech codecs comprises an encoder unit and a decoder unit, as required by claim 1. Indeed, Rabipour '515 specifically discloses, as one of its main objectives, that each terminal is equipped with a *single* encoder and multiple decoders. As such, Rabipour '515 is incapable of teaching this feature as claimed.

Equally notable, claim 1 requires that the *terminals* be arranged to *provide information* regarding the supported *speech codecs* to *their associated switching centres* and that the first centre is configured to *perform handshaking* with the second centre, in which the *handshaking includes indication of the speech codecs* supported by the calling terminal. However, as pointed out above, Rabipour '515 specifically provides that information regarding the supported decoders is transmitted to the base stations that are associated with

the opposite terminals *prior to* the base stations carrying out their handshaking in order to establish a TFO connection. (See, Rabipour '515: FIG. 4, steps 406, 412, 422). This clearly teaches away from providing an indication of the speech codecs *during the handshaking process*, as claimed.

Applicant submits that the secondary reference, Tseng '974, is incapable of curing the deficiencies of Rabipour '515 identified above and fails in its own right to teach each and every element of claim 1. For example, Tseng '974 merely discloses a signaling method for achieving a tandem-free operation (TFO) in a mobile-to-mobile call (MMC). (See, Tseng '974: Abstract). To this end, Tseng '974 discloses an inter-system (GSB/TDMA/CMDA) TFO operation, in which the speech codecs of the terminals are system-dependent – in other words, for a given wireless system, the respective centers know *a priori* which speech codecs are supported by the terminals. (See, Tseng '974: col. 6, lines 6-15).

As such, Tseng '974 provides that the terminating BSC 14B generates a LF tone of a specific frequency and simply transmits the LF tone back to the originating BSC 14A to indicate that BSC 14B is capable of performing GSM TFO. (See, Tseng '974: col. 6, lines 16-20). For other wireless systems, such as, TDMA and CDMA, Tseng '974 merely discloses that the terminating center transmits LF tones having frequencies that uniquely correspond to the system, back to the originating center to indicate TFO capabilities.

Clearly, because the respective centers know *a priori* which speech codecs are supported by the terminals for a given wireless system, Tseng '974 cannot possibly be construed as teaching or suggesting that the *terminals* are arranged to *provide information* regarding the supported *speech codecs to their associated switching centres*, as required by claim 1. Similarly, because Tseng '974 provides that each codec is system dependent, there is no need for *each of the terminals* to *include multiple speech codecs*, in which each of the speech codecs comprises an encoder unit and a decoder unit, as also required by claim 1.

Moreover, claim 1 requires that the first centre is configured to *perform handshaking* with the second centre, in which the *handshaking includes indication of the speech codecs* supported by the calling terminal and that at least one of *the first and second centres is configured to choose the speech codec used commonly by the calling and called terminals*. However, as pointed out above, Tseng '974 merely provides that centers only receive a LF

tone to indicate whether the opposite center has TFO capability for a given wireless system. There is simply no handshaking nor codec selection between the centers, as required by the claims.

For at least these reasons, Applicant submits that none of the asserted references, whether taken alone or in combination, teach each and every element of claim 1. As such, claim 1 is clearly patentable over the applied references. In addition, because claims 2-13 depend from claim 1, claims 2-13 are patentable at least by virtue of dependency as well as for their additional recitations. Moreover, because claim 14 includes similar patentable features as claim 1, claim 14 is patentable for at least the reasons presented regarding claim 1. And, because claims 15-17 depend from claim 14, claims 15-17 are patentable at least by virtue of dependency as well as for their additional recitations. Accordingly, the immediate withdrawal of the prior art rejections of claims 1-17 is respectfully requested.

II. Conclusion.

All matters having been addressed and in view of the foregoing, Applicant respectfully requests the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of all pending claims.

Applicant submits that the entry of this Amendment is proper under 37 C.F.R. §1.116, as the claim changes: (a) place the application in condition for allowance for the reasons discussed herein; (b) *do not require any further consideration as the claim changes employ limitations from dependent claims or limitations that should have already been searched*; and (c) places the application in better form for an Appeal, should an Appeal be necessary.

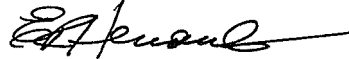
Applicant's Counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. Should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the Undersigned.

Please charge any fees associated with the submission of this paper to Deposit Account Number **03-3975**.

The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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